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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,122	08/06/2003	Duck-Chul Hwang	50602/DBP/Y35	2076

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EXAMINER	
WEINER, LAURA S	

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/635,122	HWANG ET AL.	
	Examiner	Art Unit	
	Laura S. Weiner	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) *12,13,27 and 29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,14-26,28 and 30-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8-6-03; 8-8-05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of the species where the monomer is a poly(ester)(meth)acrylate in which hydroxide groups in (polyester)polyol are partially or totally substituted with (meth)acrylic ester and unsubstituted hydroxide groups are substituted with a group having no radical reactivity in the reply filed on 8-18-06 is acknowledged.

2. Claims 12-13, 27, 29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 8-18-06.

Claim Rejections - 35 USC § 112

3. Claims 3-7, 11, 16, 19-23, 28, 30, 33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear where "the hydroxide groups in (polyester)polyol are partially or totally substituted with (meth)acrylic ester" is formed on the chain. It is unclear where "unsubstituted hydroxide groups are substituted with a group having no reactivity". It is unclear what is meant by the phrase "where the monomer is a poly(ester)(meth)acrylate in which hydroxide groups in (polyester)polyol

are partially or totally substituted with (meth)acrylic ester and unsubstituted hydroxide groups are substituted with a group having no radical reactivity". This phrase makes the claims vague and indefinite. The elected species is unclear. Please send in more information on this elected species. Structures of the monomers would be helpful.

4. Claims 32-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 32 is rejected because there is no antecedent basis for "of the polymer".

Claim 33 is rejected because there is no antecedent basis for "wherein the polyester polyol".

Claim 34 is rejected because it is unclear what is meant by "Li2Sn ...dissolved in catholyte". There is no catholyte cited in the claims.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-11, 14-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (US 2003/0232240).

Lee et al. teaches a polymer electrolyte which includes a multi-functional acrylate based compound, at least one selected from the group consisting of polyalkylene glycol di(meth)acrylates and polyalkylene glycol (meth)acrylate and an electrolytic solution containing a lithium salt and an organic solvent. Lee et al. teaches on page 1, [0015], a lithium battery comprising a polymer electrolyte comprising a polymerized product of a polymer electrolyte forming composition comprising: polyester (meth)acrylate having a polyester polyol moiety having three or more hydroxide (-OH) groups, at least one hydroxide group being substituted by a (meth)acrylic ester group and at least one hydroxide group being substituted by a radical non-reactive group or its polymer; at least one selected from polyalkylene glycol di(meth)acrylates represented by Formula 1 and polyalkylene glycol (meth)acrylates represented by Formula 2; and an electrolytic solution having a lithium salt and an organic solvent. Lee et al. teaches on page 4, [0054-0055], that a polymerization initiator and a polymerization catalyst my be further added to the composition for forming the polymer electrolyte. The polymerization initiator can be dilauroyl peroxide, dicumyl peroxide, di-t-butyl peroxide, dicyclohexyl peroxy dicarbonate, azobisisobutyronitrile, etc. Lee et al. teaches on pages 6-7, [0077-0080], in Example 1, that 0.9 g of the multifunctional acryl based compound prepared in Synthesis Example 1 and 0.1 g of polyethylene glycol

dimethacrylate was mixed with 0.01 g dilauroyl peroxide and 30 g of 1.3 mol/L LiPF6 electrolytic solution of EC, DEC, PC and FB.

7. Claims 1-6, 8-11, 14-16; 17-20, 22-26, 28, 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Taniuchi et al. (5,925,283).

Taniuchi et al. teaches in column 2, a polymeric gel electrolyte comprising a polymer matrix, a solvent and an electrolytic salt. Taniuchi et al. teaches in columns 5-7, that the crosslinked polymer matrix is a combination of a monofunctional monomer and a polyfunctional monomer and that a polymerization initiator such as a photopolymerization initiator or a thermal polymerization initiator is employed. The thermal polymerization initiators include azobisisobutyronitrile, benzoyl peroxide, lauroyl peroxide, etc. Examples of the monofunctional acrylates include hydroxyalkyl (meth)acrylates, methylethylene glycol (meth)acrylate, propylene glycol (meth)acrylates, The polyfunctional (meth)acrylate compound are a monomer having two or more (meth)acryloyl groups. Examples include, ethylene glycol dimethacrylate, triethylene glycol di(meth)acrylate, dipentaerythritol hexa(meth)acrylate, etc. Taniuchi et al. teaches in column 8, that the positive electrode includes transition metal sulfide such as TiS2, MoS2 and Co2S5; LiMnO2, LiCoO2, etc.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S. Weiner whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura S Weiner
Primary Examiner
Art Unit 1745

September 26, 2006